



Aluminum Electrolytic Capacitors

Capacitors with screw terminals

Series/Type: B43320, B43340

Date: April 1, 2014

© EPCOS AG 2015. Reproduction, publication and dissemination of this publication, enclosures hereto and the information contained therein without EPCOS' prior express consent is prohibited.

EPCOS AG is a TDK Group Company.

Long life grade capacitors

长寿命级电容器

Applications

应用

- Uninterruptible power supplies
不间断电源
- Frequency converters
变频器
- Solar and wind power generator
太阳能和风力发电设备
- Switch mode power supplies in industrial and medical electronics
工业和医疗电子产品中的开关电源

Features

特点

- All-welded constructions ensure reliable electrical contact
全焊结构，确保可靠的电气接触性
- High reliability and high ripple current capability
高可靠性与高耐纹波电流能力
- RoHS-compatible
符合RoHS要求

Construction

结构

- Charge/discharge-proof, polar
耐充放电，有极性
- Aluminum case with insulating sleeve
铝质外壳，带绝缘套管
- Poles with screw terminal connections
螺钉连接电极
- Mounting with ring clips, clamps or threaded stud
采用卡夹/卡环或底部螺栓安装

Specifications and characteristics in brief
规格性能参数一览表

Rated voltage V_R 额定电压 V_R	350...450 V DC				
Surge voltage V_S 浪涌电压 V_S	$1.10 \cdot V_R$				
Operating temperature range 工作温度范围	-40 °C...+85 °C				
Rated capacitance C_R 额定电容 C_R (20 °C, 120 Hz)	1000...18000 μ F				
Capacitance tolerance 电容公差	$\pm 20\%$ M				
Dissipation factor(max.) 损耗正切角(最大值) 20°C, 120Hz.	0.2				
Leakage current I_{leak} (20 °C, after 5 minutes) 漏电流 I_{leak} (20 °C, 5分钟后)	$I_{leak} \leq 0.008 \mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V} \right)$ or 5 mA whichever is smaller (5 mA或取更小值)				
Low temperature stability 低温稳定性 (max impedance ratio) (最大阻抗比率)	V_R (V DC)	350	400	450	
	Z (-40 °C) Z (+20 °C)	22	20	16	
Useful life 使用寿命 (85 °C, V_R , $I_{AC,R}$)	5000 h	Requirements 要求:			
		$\Delta C/C \leq \pm 15\%$ of initial value 初始值的 $\pm 15\%$			
		$\tan \delta \leq 1.75$ times initial specified limit 1.75倍初始规定值			
Shelf life 储存寿命	After storage for 1000 h at 85 °C, the capacitors shall meet the requirement of useful life test after reforming process. After test: V_R to be applied for 30 minutes, 24 to 48 hours before measurement.				
	85°C高温贮存1000小时, 并预处理后, 电容器必须符合使用寿命测试中对其电性能的要求。预处理方法: 先加额定电压充电30分钟, 恢复24至48小时后再测试。				
Frequency multiplier for rated ripple current 额定纹波电流频率系数	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
	0.68	1.00	1.22	1.36	1.40
Temperature multiplier for rated ripple current 额定纹波电流温度系数	+40 °C	+55 °C	+70 °C	+85 °C	
	1.92	1.75	1.46	1.00	
Sectional specification 分规范	IEC 60384-4				

Ripple current capability
耐纹波电流能力

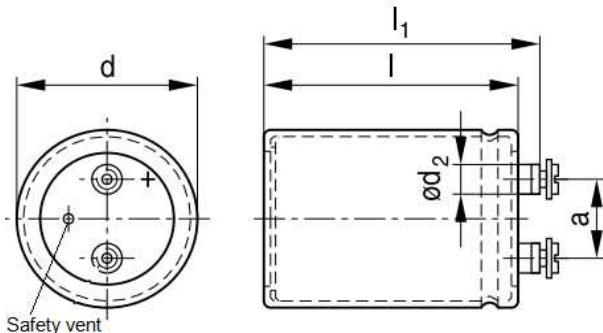
Due to the ripple current capability of the contact elements, the following current upper limits must not be exceeded:

因为接触元件的耐纹波电流能力限制，工作电流不得超过下表的极限值

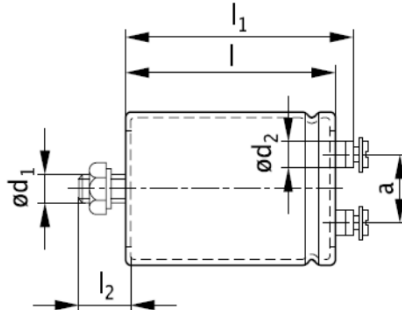
Capacitor diameter 电容器直径	51.6mm	64.3mm	76.9mm	91.0mm
$I_{AC,max}$	34A	45A	57A	80A

Dimensional drawings
尺寸图
B43320

Ring clip/clamp mounting
卡环或卡夹安装


B43340

Threaded stud mounting
底部螺栓安装



M5: Min. reach of screw = 8 mm

M5: 螺纹最小深度 = 8 mm

M6: Min. reach of screw = 10 mm

M6: 螺纹最小深度 = 10 mm

Positive pole marking: +

正极标志: +

The base of types with threaded stud is fully insulated.

带底部螺栓型号底部完全绝缘。

The can is insulated with two sleeve layers.

铝壳以双层套管绝缘。

Dimensions and weights
尺寸与重量

Terminal 端子	Dimensions (mm) with insulating sleeve 带绝缘套管的尺寸(mm)							Approx. weight (g) 约计重量(克)
	d	$l+3/-0$	$l_1+3/-0$	$l_2+0/-1$	d_1	$d_2 \text{ max.}$	$a+0.2/-0.4$	
M5	51.6 +0/-0.8	75	81	17	M12	11.4	22.2	230
		96	102					290
		130	136					360
M5	64.3 +0/-0.8	96	101.2	17	M12	13.2	28.5	415
		115	120.2					505
		130	135.2					555
		155	160.2					655
		195	200.2					865
M6	76.9 +0/-0.7	115	120.2	17	M12	17.7	31.7	640
		130	135.2					790
		155	160.2					1010
M6	91.0 +0/-2	157	161.8	17	M12	17.7	31.7	1430
		196	200.8					1630
		236	240.8					2230

Capacitors with screw terminals 螺钉式电容器
Long life industrial – 85°C 长寿命工业型 – 85°C

B43320,B43340

Packing

包装

Capacitor diameter 电容器直径	Packing units (pcs.) 包装单位 (件)	Capacitor diameter 电容器直径	Packing units (pcs.) 包装单位 (件)
51.6mm	22	76.9mm	12
64.3mm	15	91.0mm	8

For ecological reasons the packing is pure cardboard.

为保护生态环境，包装仅使用纸板。

Accessories

附件

The following items are included in the delivery package, but are not fastened to the capacitors:

以下物品已包含在交货包装中，但没有固定到电容器上：

	Thread 螺纹	Toothed washers 带齿垫圈	Screws/nuts 螺钉或螺帽	Maximum torque 最大扭矩
For terminals 用于端子	M5	-	Outer hex-cross screw with spring and plain washer M5 x 10 外六角十字型螺钉及弹垫垫圈和平垫圈 M5 x 10	2.5 Nm
	M6	-	Outer hex-cross screw with spring and plain washer M6 x 12 外六角十字型螺钉及弹垫垫圈和平垫圈 M6 x 12	4.0 Nm
For mounting ¹⁾ 用于安装 ¹⁾	M12	J 12.5 DIN 6797	Hex nut BM 12 DIN 439 六角螺母 BM 12 DIN 439	10 Nm

The following items must be ordered separately. For details, refer to chapter "Screw terminals – accessories"

以下物品需要另外购买。详情参阅章节“螺钉式电容器—附件”。

Item 物品	Type 型号
Ring clips 卡环	B44030
Clamps for capacitors with $d \geq 64.3$ mm 电容器用卡夹, $d \geq 64.3$ mm	B44030
Insulating parts 绝缘部件	B44020

¹⁾with different mounting method, this item is not always required. it will be delivered upon customer request accordingly.

由于安装方式不同，该配件不一定都适用。仅当客户提出需求时，EPCOS将配送该部件。

Technical dates and ordering codes

V _R	C _R 120Hz 20 °C μF	Case dimensions d x l mm	ESR _{typ} 120 Hz 20 °C mΩ	I _{AC,max} 120 Hz 40 °C A	I _{AC,R} 120 Hz 85 °C A	Ordering code
V DC						
350	1200	51.6 x 75	100	12.2	5.8	B433*0A4128M0#0
	1500	51.6 x 75	80	14.1	6.7	B433*0A4158M0#0
	1800	51.6 x 96	65	15.9	7.6	B433*0A4188M0#0
	2200	51.6 x 96	55	18.2	8.6	B433*0A4228M0#0
	2700	51.6 x 130	45	21.1	10.1	B433*0B4278M0#0
	3300	51.6 x 130	36	24.3	11.5	B433*0A4338M0#0
	3900	64.3 x 115	30	27.2	12.9	B433*0A4398M0#0
	4700	64.3 x 130	24	31.4	15.5	B433*0A4478M0#0
	5600	64.3 x 155	20	35.4	17.6	B433*0A4568M0#0
	5600	76.9 x 115	20	35.5	17.6	B433*0C4568M0#0
	6800	64.3 x 195	17	40.8	20.3	B433*0D4688M0#0
	6800	76.9 x 130	17	40.1	19.8	B433*0C4688M0#0
	8200	76.9 x 155	15	45.3	22.4	B433*0A4828M0#0
	10000	91.0 x 157	12	51.3	27.0	B433*0A4109M0#0
	12000	91.0 x 157	10	57.9	30.3	B433*0A4129M0#0
	15000	91.0 x 196	8	67.1	35.2	B433*0A4159M0#0
18000	91.0 x 236	7	76.0	39.9	B433*0B4189M0#0	
400	1000	51.6 x 75	110	11.5	5.5	B433*0A9108M0#0
	1200	51.6 x 75	90	13.0	6.2	B433*0A9128M0#0
	1500	51.6 x 96	70	15.1	7.2	B433*0A9158M0#0
	1800	51.6 x 96	60	17.1	8.1	B433*0A9188M0#0
	2200	51.6 x 130	50	19.8	9.4	B433*0A9228M0#0
	2700	64.3 x 96	40	23.0	10.9	B433*0A9278M0#0
	3300	64.3 x 115	34	26.2	12.4	B433*0A9338M0#0
	3900	64.3 x 130	28	29.4	13.9	B433*0A9398M0#0
	4700	64.3 x 155	24	33.5	15.9	B433*0A9478M0#0
	4700	76.9 x 115	24	33.5	15.9	B433*0C9478M0#0
	5600	64.3 x 195	20	38.0	18.1	B433*0B9568M0#0
	5600	76.9 x 130	20	37.5	17.8	B433*0C9568M0#0
	6800	76.9 x 155	16	44.7	21.2	B433*0A9688M0#0
	8200	91.0 x 157	14	47.8	24.1	B433*0A9828M0#0
	10000	91.0 x 157	11	54.9	27.5	B433*0A9109M0#0
	12000	91.0 x 196	9	61.8	31.1	B433*0A9129M0#0
15000	91.0 x 236	8	72.2	36.3	B433*0B9159M0#0	
* = Mounting style 2 = for capacitors with ring clip/clamp mounting 4 = for capacitors with threaded stud				# = Insulation feature 0 = PVC insulation 6 = PET insulation		

Technical dates and ordering codes

V_R	C_R 120Hz 20 °C μF	Case dimensions d x l mm	ESR_{typ} 120 Hz 20 °C m Ω	$I_{AC,max}$ 120 Hz 40 °C A	$I_{AC,R}$ 120 Hz 85 °C A	Ordering code
450 V DC	1000	51.6 x 75	95	12.2	5.8	B433*0A5108M0#0
	1200	51.6 x 96	80	13.7	6.5	B433*0A5128M0#0
	1500	51.6 x 115	65	16.0	7.6	B433*0A5158M0#0
	1800	51.6 x 130	55	18.3	8.7	B433*0A5188M0#0
	2200	64.3 x 96	45	21.2	10.1	B433*0A5228M0#0
	2700	64.3 x 115	36	24.3	11.5	B433*0A5278M0#0
	3300	64.3 x 130	30	27.8	13.2	B433*0A5338M0#0
	3900	64.3 x 155	24	31.3	14.9	B433*0A5398M0#0
	3900	76.9 x 115	24	31.5	14.9	B433*0C5398M0#0
	4700	64.3 x 195	20	35.8	17.1	B433*0D5478M0#0
	4700	76.9 x 130	20	35.5	16.8	B433*0C5478M0#0
	5600	76.9 x 155	17	41.5	19.7	B433*0A5568M0#0
	6800	91.0 x 157	14	44.8	22.6	B433*0A5688M0#0
	8200	91.0 x 157	12	51.1	25.6	B433*0A5828M0#0
	10000	91.0 x 196	10	58.2	29.2	B433*0A5109M0#0
12000	91.0 x 236	8	65.9	33.2	B433*0B5129M0#0	

* = Mounting style

2 = for capacitors with ring clip/clamp mounting

4 = for capacitors with threaded stud

= Insulation feature

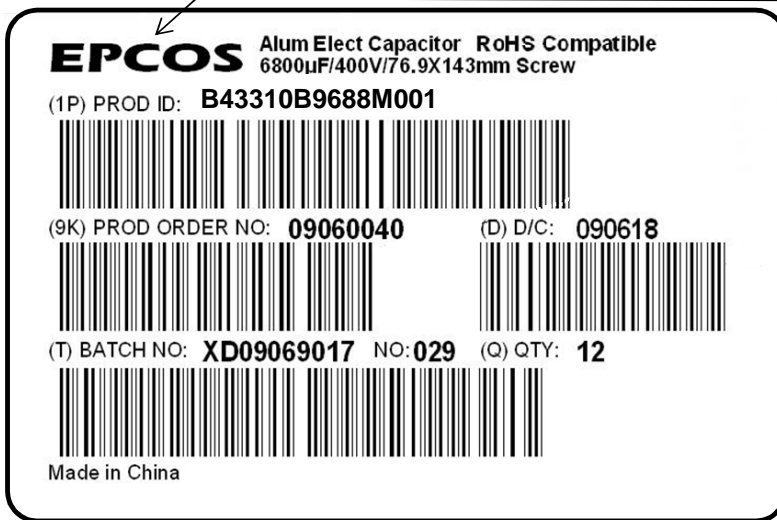
0 = PVC insulation

6 = PET insulation

Bar code label and marking of the capacitor 条形码标签和电容器标签

Below is an example of bar code label on package:

以下为包装箱上条形码标签示例:



Brand 品牌

(1P) Ordering code	订购代码
(9K) Product order number	订单号
(D) Date code (yywwdd)	日期代码 (年月日)
(T) Batch number	批号
(Q) Quantity	数量

The example below shows how the capacitor sleeve are marked:

以下示例说明电容器套管上的标签内容:



EPCOS	Logo	标志
B43310-B9688-M1	Part number (ordering code)	料号 (订购代码)
6800 µF (M)	Rated capacitance, tolerance (in coded form)	额定电容、容差 (代码形式)
400 V- 40/085/56	Rated voltage, climatic category	额定电压、气候分类
06.09 X	Month and year of production	月.年 (生产日期)

The climatic category is specified according to IEC 60068-1. If there is not enough space on the case, the following codes may be used:

气候类别符合 IEC 60068 - 1。如果壳体上没有足够空间，可使用以下代码：

E.g.: 40/085/56, in coded form, would read GPF 例如：40/085/56的代码形式为GPF

1st letter (lower category temperature) 首字母 (下限类别温度)

Code letter 代码字母	F	G	H
Temperature 温度 (°C)	-55	-40	-25

2nd letter (upper category temperature) 第二字母 (上限类别温度)

Code letter 代码字母	K	M	P	S	U
Temperature 温度 (°C)	+125	+105(+100)	+85	+70	+60

3rd letter (humidity) 第三字母 (湿度)

Letter F: withstands IEC60068-2-78 Cab (damp heat, steady state), test duration 56 days.

字母F: 经受IEC 60068-2-78试验箱 (湿热、恒稳态), 试验周期56天。

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.tdk-electronics.tdk.com/material). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.
6. Unless otherwise agreed in individual contracts, **all orders are subject to our General Terms and Conditions of Supply**.
7. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard**. The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements ("CSR") TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System**. For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.
8. The trade names EPCOS, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, ExoCore, FilterCap, FormFit, LeaXield, MiniBlue, MiniCell, MKD, MKK, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.tdk-electronics.tdk.com/trademarks.

Release 2018-10